

### Assembler Example:

At the very end of the template file the following is placed:

5           ;-----;  
dw    ENDOF\_STRUCTURES

### **C. SET\_REPEAT\_COUNT\_ID**

This control key is used to indicate the beginning of a repeating loop in the structure definition. When encountering this key, the utility program uses the value

10 following the key (Repeat Type) to know how to determine the repeat count.

Encoded Value:       0xFFE2

#### Format:

15           dw    SET\_REPEAT\_COUNT\_ID  
dw    Repeat count type  
db    Size of repeated section in bytes (RepeatSize)  
db    Number of non-repeating bytes that follow the repeated block

#### Repeat Count Types:

0: GET\_COUNT\_FROM\_FOLLOWING\_OFFSET

1: GET\_COUNT\_FROM\_LENGTH

#### Notes:

- 25           1. If Repeat Count is of the type GET\_COUNT\_FROM\_FOLLOWING  
              \_OFFSET, then the utility program gets the explicit count from the next offset  
              in the SMBIOS structure.
- 30           2. If Repeat Count is of the type GET\_COUNT\_FROM\_LENGTH, the utility  
              program determines the count based on the overall length of the structure and  
              the size of the repeat block.
3. If the utility program has processed a SET\_REPEAT\_SIZE\_ID, then that size  
              will be used in the count calculation.
- 35           4. If the utility program has not encountered a SET\_REPEAT\_SIZE\_ID key, then  
              the repeat size will be determined from the 'RepeatSize' value in the Format  
              header.
5. If RepeatSize is set to 0, then the SET\_REPEAT\_SIZE\_ID key must be used  
              before beginning the loop.

40   The count calculation for GET\_COUNT\_FROM\_LENGTH is as follows:

$$\frac{(\text{Structure Length} - \text{Current offset in the structure} - \text{Number of non-repeating bytes})}{\text{RepeatSize}}$$

Assembler Example:

This section of code is from Memory Controller Information, Type 5, offset 0Fh.

A listing of the Type 5 structure is illustrated in Table 9, (offsets 00h - 0Dh are not  
5 illustrated). Note that the number of non-repeating bytes is 1 because of the bit field  
following the Memory Module Configuration Handle repeat block.

Table 9				
Offset	Name	Length	Value	Description
0Eh	Number of Associated Memory Slots (x)	BYTE	Varies	Defines how many of the Memory Module Information blocks are controlled by this controller
0Fh to (0Fh + (2*x) - 1)	Memory Module Configuration Handles	x WORD	Varies	A list of memory information structure handles controlled by this controller. Value in offset 0Eh (x) defines the count
0Fh + (2*x)	Enabled Error Correcting Capabilities	BYTE	Bit Field	Identifies the error-correcting capabilities that were enabled when the structure was built.

In this instance, the offset 0Eh provides the number of times the looped information will be repeated. Below illustrates use of the

10 GET\_COUNT\_FROM\_FOLLOWING\_OFFSET to get the count from the offset 0Eh and  
use of the SET\_REPEAT\_COUNT\_ID, SET\_REPEAT\_START\_ID, and  
SET\_REPEAT\_END\_ID keys.

```
..
..
15 ..
    dw    SET_REPEAT_COUNT_ID          ; Set REPEAT identifier.
    db    GET_COUNT_FROM_FOLLOWING_OFFSET; Get repeat count from
                                         next offset
    db    2                            ; Size of repeated section in bytes
20    db    1                            ; Number of non-repeating bytes

    dw    DATA_ID                     ; Data identifier
    db    "Number of Associated Memory Slots",0 ; Field Description
    db    01h                          ; Length of data
25    db    FORMAT_DECIMAL              ; Printed Data format
    db    " Slots",0                    ; Any text to follow data
    db    "Number of memory module slots controlled by this controller",0
```

```

; -----Repeating block start
dw    SET_REPEAT_START_ID
dw    DATA_ID                ; Data identifier
db    "Memory Module Configuration Handle",0 ; Field Description
5     db    02h                ; Length of data
db    FORMAT_HEX              ; Printed Data format
db    "h",0                   ; Any text to follow data
db    "Handle of a memory module controlled by this controller",0

10    dw    SET_REPEAT_END_ID
; -----Repeating block end

dw    BIT_FIELD_ID            ; Data identifier
db    "Enabled Error Correcting Capabilities",0 ; Field Description
15    db    1                  ; Bytes used for bit field
db    "No",0                  ; String to use when bit = 0
db    "Yes!",0                ; String to use when bit = 1
; Begin bit field encoding for this value
db    00h, "Other",0
20    db    01h, "Unknown",0
db    02h, "None",0
db    03h, "Single Bit Error Correcting",0
db    04h, "Double Bit Error Correcting",0
db    05h, "Error Scrubbing",0
25    dw    END_OF_BIT_FIELD_ID

```

#### **D. SET\_REPEAT\_SIZE\_ID**

Used to indicate the size of a repeated block of fields in the structure definition when the repeat size is actually specified by a Field value in the structure data, rather than being given in the SET\_REPEAT\_COUNT\_ID information. When encountering this

30 key, the utility program uses the following byte in the SMBIOS structure to know how to determine the repeat count.

35      Encoded Value:      0xFFE3

Format:

dw      SET\_REPEAT\_SIZE\_ID